# A perspective of the Austrian State Archives on the systematic assessment and improvement of Digital Preservation activities, processes and systems

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## ABSTRACT

The Austrian State Archives put a digital repository into operations with the aim to store and preserve electronic records created by the federal government and administration of Austria. The public tender specifying the requirements of the system to be purchased was aligned with the functional entities described in the Reference Model for an Open Archival Information System (OAIS). This approach required the organisation to partly adapt their processes to the Information System after its roll-out. Furthermore, the requirements stated in the tender did not allow conclusions to be drawn about the level of support they have on the organisation's ability to master the challenges of digital preservation in a specific context. This requires a systematic approach for the assessment and improvement of activities, processes and systems in the organisation.

## Keywords

Digital Preservation, Capabilities, Processes, Assessment, Improvement

## 1. LONG-TERM PRESERVATION AT THE AUSTRIAN STATE ARCHIVES

The Austrian State Archives have the legal mandate to preserve records produced by the federal government and administration. This includes 13 ministries, supreme bodies, and subordinate agencies accounting for around 12,000 users processing and producing electronic records every day.

The State Archive is a subordinate agency of the Federal Chancellery and has been strongly focussed on the preservation of non-digital material until recently. It is amongst the most important archives world-wide with its oldest item in the collection of acts and charters of the Babenbergs and Habsburgs, dating back to 816 A.D. With the introduction of electronic records in the federal administration in

2004, the preservation of electronic material (born digital) has also become relevant for the State Archive. Ministries are legally obliged to transfer their acts and documents to the State Archives after a defined period of time (in most cases after 10 years)[1]. In 2012 the State Archive rolled-out an organisation-wide digital repository system to be able to fulfil its mandate with the advent of born-digital electronic records. The State Archive does not operate its own IT department and thus does not have a dedicated data center infrastructure. Operating such an infrastructure is not seen as the core competence of the State Archive. Operations of hardware and software of the digital repository is thus being outsourced to a private company.

The digital repository in place today is the result of a project which started in 2007 with a requirements and market analysis. Going through public tendering and vendor selection, the actual implementation of the digital repository started in December 2009.

## 2. SYSTEMATIC ASSESSMENT AND IMPROVEMENT OF DIGITAL PRESERVATION

Starting point in 2007/2008 for the implementation of the digital repository was the previous version of ISO 14721:2012 Reference model for an Open Archival Information System[2]. The functional requirements requested from the digital repository were aligned with the functional entities described in the reference model and specified accordingly in the public tender. The OAIS model provided the, by that time, unexperienced project team, with a first understanding of digital preservation, repository systems, and the terminology used in this domain.

This approach however put the emphasis mainly on the implementation of a single information system according to the reference model without taking sufficiently into account the organisation and its implemented processes. At the time of tender preparation, there was no doubt that a repository system "according" to the OAIS model would automatically be suitable for storing and preserving the electronic records of the Republic of Austria.

The shortcomings of the approach we used to build up the digital repository in our organisation mostly result from a mixup of organisational, process, and technological aspects. Based on our experience we formulate requirements of an approach that on the one hand shall be able to guide the

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[1] §5(1) Bundesarchivgesetz (Federal Archive Act)

design and deployment of organizational capabilities and on the other hand enable a systematic assessment and improvement of processes and systems required for trustworthy digital preservation.

## 2.1 Requirements

1. **Follow existing standards** The development of an approach for systematic assessment and improvement shall follow existing and proven standardised models.

2. **Clear separation of Business Process and Information System** Requirements on the business process must be clearly separated from requirements on the Information System required/desired to support or enable the business process. Current versions of the OAIS reference model and ISO 16363 Audit and certification of trustworthy digital repositories (RAC)[1] are still confusing both. Since the State Archive decided to outsource IT operations of hardware and software a precise definition of responsibilities including contracts is particularly important.

3. **Explicit focus on "what" instead of "how"** What capabilities are required to reach a certain level of digital preservation? How the actual processes are designed and implemented (the means deployed) should not be a concern of the assessment and improvement model.

4. **Required organisational skills and expertise** Organisations shall be able to derive roles and responsibilities including their required skills and expertise to achieve a certain level of digital preservation. Different skills and experties on the business and technology side are required.

5. **Specification of legitimate evidence** It must be clearly specified what kind of evidence must be provided by the organisation to prove a certain organisational or system capability. Whether the evidence is sufficient or not must be objectively measurable and made transparent to organisations striving for certification for instance.

6. **Best practices in specific areas required for successful digital preservation** The processes implemented in the organisation can be compared to these best practices so areas of possible improvement can be identified.

7. **Experience base** An experience base shall be established providing organisations with performance indicators such as the average time to move up one maturity level. This experience base shall also be used for further improvements of the model to involve organisations as much as possible.

8. **Enable communication to management, customers and stakeholders** Means required to reach or hold a certain maturity level need to be communicable to the executive level in a simple and uniform manner. The same shall be true for the communication of how well organisational processes compare to international and domain specific practices.

## 3. CONCLUSIONS

The deployment of a digital repository in the Austrian State Archives, aimed at the preservation of electronic records of the Republic of Austria, showed that existing models and approaches that claim to support such an endeavour are not sufficient. Models such as OAIS still provide a very high-level view on the capabilities required for successful digital preservation and mix up business and IT concerns. More sophisticated methods for assessment and improvement of organisational processes and systems are required that make possible the right degree of alignment of technology with business goals. In this paper we pointed out shortcomings of the approach we followed and formulated them as requirements of a future model that shall facilitate the implementation, assessemnt and further improvement of digital preservation systems.

## 4. REFERENCES

[1] ISO. *Space data and information transfer systems - Audit and certification of trustworthy digital repositories (ISO/DIS 16363). Standard in development*, 2010.
[2] ISO. *Open archival information system – Reference model (ISO 14721:2012)*. International Standards Organization, 2012.